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The role of the institutional framework in the relationship between earnings management and corporate social performance

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Abstract

This study examines the influence of the institutional framework of European countries: more specifically coordinated market economies and liberal market economies on the earnings management and corporate social performance nexus. Employing econometric models impervious to endogeneity, our results show that socially responsible firms (particularly those with high governance scores) in coordinated market economies engage in earnings management. These findings suggest that in countries in which institutional settings enable implicit undertakings of corporate social responsibility in firm policies, firm practices ostensibly related to corporate social performance may serve purposes other than meeting stakeholders' ethical expectations and those of society at large.

JEL classification: G30, G34, M14

Keywords: corporate social performance, earnings management, institutional framework, panel models

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1 Introduction

There has been significant debate on the merits of corporate social responsibility (CSR) activities on the bottom line of firms, and the previous literature offers mixed views of CSR's role.

For instance, Friedman (1970) and Jensen (2001) contend that the firm's primary objective is to generate profits and that any spending on CSR is necessarily in contravention of this goal. Similarly, Aupperle *et al.* (1985) note that expenditures on socially responsible initiatives reduce firm profitability. Moreover, antagonists of CSR have maintained that expending resources on socially responsible undertakings can be unprofitable and render firms not viable (Michelon *et al.* 2013). Under agency theory, CSR activities may not only be an irresponsible use of resources but also the outcome of shareholder-manager agency conflicts (Jensen and Meckling 1976).

Alternatively, Mahmood and Humphrey (2013) note that although profit maximisation can enhance financial performance, it might also adversely affect the views of stakeholders at large and lead to detrimental effects on a firm's long-term growth and sustainability. This finding might be attributable to the extensive outlook of business performance, which has been expanded from a purely financial notion to include environmental and social features and is often referred to as "the triple bottom line" (Prado-Lorenzo and Garcia-Sanchez 2010). According to instrumental stakeholder theory, CSR activities can also help firms reduce transaction costs and improve access to resources by creating value (Foss and Foss 2005). More precisely, by increasing transparency (Kim *et al.* 2012) and mitigating managerial opportunism, CSR activities reduce information asymmetry and agency problems. In general, as globalisation has fostered easier access to information and growing stakeholder involvement in firm activities, CSR can no longer be understood as merely a discretionary obligation but instead should be conceived of as the strategic impetus for corporate success. In this context, social responsibility and transparency must be integrated into business operations to meet stakeholder expectations (Amaladoss and Manohar 2013).

In this paper, we examine the role played by CSR and analyse the relationship between the level of agency problems, as proxied by the earnings management (EM) that firms undertake, and firms' corporate social performance (CSP). In addition, we provide fresh insights into the influence that a firm's institutional environment wields on its agency problems. Neo-institutional theory posits that corporations are embedded in a nexus of formal and informal frameworks providing behavioural guidelines to firms and their managers. Matten and Moon (2008) defined institutional frameworks not only as the formal organizations of government, society and corporations but also as the norms, incentives, and rules that together wield influence over managerial decisions. In particular, we focus on the coordinated market economies of continental Europe and on the liberal market economies of the Anglo-Saxon countries. In the former, stakeholder involvement is highly institutionalised, and firms must at a minimum communicate their social initiatives (Jackson and Apostolakou 2010). Consequently, CSR in coordinated market economies tends to be embedded in firm policies (Matton and Moon 2008). By contrast, in liberal market economies, the absence of institutionalised stakeholder involvement allows firms to choose their principal stakeholder and to communicate their activities by explicitly articulating their social policies and practices to this principal stakeholder (Ioannou and Serafeim 2012).

We investigate the relationship between EM and CSP using data on European countries covering the period beginning in 2002 and continuing through 2013 from Thomson Reuters ASSET4 (ASSET4). European-wide data are of special interest to us as these data cover member countries in different institutional settings. The countries' institutional frameworks are classified as either coordinated market economies or liberal market economies using the classification developed by Matten and Moon (2008). In addition, we investigate whether the manifestation of agency conflicts as proxied by the level of EM can be attributed to cross-sectional variations in CSP empowered by the institutional environment.

The previous literature has examined the relationship between EM and CSP (Chih *et al.* 2008; Gargouri *et al.* 2010; Scholtens and Kang 2012). However, Baughn *et al.* (2007), Duran and Bajo (2012), Ioannou and Serafeim (2012), Martínez-Ferrero *et al.* (2016) and Ortiz-de-Mandojana *et al.* (2016) have specifically shown that the institutional frameworks within which firms operate affect firm CSP. We attempt to combine these two streams in the literature by shedding more light on the effect that institutional settings have on the relationship between EM and CSP.

This study contributes to the literature various ways. First, it highlights the importance of the institutional context to CSR studies. Moreover, understanding the effects of the institutional context is particularly relevant when there are increasing efforts to harmonise policies across regions and countries, such as in the case of Europe. Finally, our results offer important insights into issues of CSR that are relevant to both regulators and stakeholders alike.

Our findings thus have several implications. First, regulators should pay particular attention to the suitability of legislation for particular national contexts prior to adopting international legislation. Second, this study offers regulators insights into those areas upon which new regulations should focus. Specifically, our results show that new regulations should foster communication between firms and their stakeholders while attempting to improve the quality of earnings reported by firms. Finally, stakeholders such as shareholders, potential and current investors, and analysts should consider the institutional context and the effects such contexts can have on firm behaviour when making their investment decisions or when preparing their investment advice.

The remainder of this paper is structured as follows. Section 2 provides a review of the relevant literature, section 3 addresses the data and methodology and section 4 presents the results. The paper concludes in section 5 with a discussion and conclusions.

2 Literature and hypotheses

The use of firm resources for CSR activities has been much debated by academics and practitioners alike. According to Miras-Rodriguez *et al.* (2015), Castro *et al.* (2016), Schons and Steinmeier (2016), CSR activities may improve firm performance, create value (Maso *et al.* 2017), and/or improve corporate image (Castro *et al.* 2016) and reputation (Perez and Bosque 2015; Lin *et al.* 2016). Conversely, Friedman (1970) argues that CSR activities generally signal an irresponsible use of firm resources or are simply window-dressing (Cai *et al.* 2012), leading to deteriorating firm performance in either event (Miras-Rodriguez *et al.* 2015).

According to agency theory as formulated by Jensen and Meckling (1976), separating the interests of shareholders and managers creates agency problems within a firm, which consequently leads to managers pursuing their own individual interests as opposed to shareholders' interests. Jensen (2001) extends agency theory to firms that are subject to more than one principal. In such a setting, firms are subject to stakeholders other than shareholders, such as employees, communities, governments, creditors, etc. Firms are thus expected not only to meet the goal of value maximisation for shareholders but also to address the requirements and expectations of those principals and stakeholders enumerated above. Jensen (2001) hypothesises that when a firm attempts to meet the demands of many stakeholders with myriad objectives, management is left unaccountable with regard to the stewardship of the firm's resources.

Fama and Jensen (1983) explain that monitoring and accountability are among those measures that have been proven to mitigate the agency problem and to align the interests of managers with the goals of principals. In the absence of clear criteria for monitoring and accountability, managers can otherwise pursue their personal interests. For example, rent-seeking managers can attempt to hide the firm's true performance from stakeholders by employing EM; in other words, managers can use their discretion in financial reporting to dampen economic losses and overstate economic gains.

Therefore, our first hypothesis is as follows:

H1: EM and CSP have a positive relationship.

Later studies extend the CSR literature by contextualising its effects by country (Jamali and Mirshak 2006), the financial outcome expected (Scholtens and Kang 2013), the type of stakeholder (Schons and Steinmeier 2016), and more recently by culture (Miras-Rodriguez *et al.* 2015; Maso *et al.* 2017). With regard to the first stream in the literature, Matten and Moon (2008: 407) argue that “national differences in CSR can be explained by historically grown institutional frameworks that shape national business systems”. According to these authors, a national business system “shares key features with the varieties of capitalism approaches that distinguish coordinated market economies and liberal market economies”. An institutional framework that encourages coordinated activities between its social and economic actors is expected to include strong elements of implicit CSR, resulting in firms addressing stakeholder issues in collective rather than individual terms. In coordinated market economies, stakeholders would thus often be involved in formulating CSR requirements. By contrast, in the framework of liberal market economies in which individualism, democratic pluralism and utilitarianism prevail, individual corporations normally articulate their own version of societal responsibilities (Matten and Moon 2008).

Theoretically, Aguilera *et al.* (2007) argue that the institutional framework in which firms operate influences managers’ behaviour. In the Anglo-Saxon model in which shareholders as the principal encourage managers to engage in CSR - managers tend to choose strategies that yield benefits in the near future. However, in continental Europe, which is characterised by high levels of involvement of stakeholders other than shareholders (such as creditors), managers tend to choose CSR strategies that have a longer-term focus.

Consistent with these expectations, prior studies have found that CSP varies across countries with different national business systems (Jackson and Apostolakou 2010; Ioannis and Serafeim 2012; Duran and Bajo 2013). Moreover, firms in the liberal market economies of the Anglo-Saxon countries exhibit higher CSP than those in the coordinated market economies of continental Europe. Jackson and Apostolakou (2010) explain that firms in liberal market economies engage in explicit CSR activities to mitigate institutionalised forms of stakeholder participation, whereas firms in coordinated market economies engage in more implicit CSR activities.

Therefore, we hypothesise that different institutional settings affect managerial behaviour by presenting managers with different types of opportunities to pursue their personal interests. In particular, we hypothesise that when its institutional framework weakens a firm's ability to monitor its managers, managers can then pursue their own personal interests while presumably fulfilling principals' expectations. When firms are subject to multiple principals as they are in coordinated market economies, it may lead to monitoring by the principals. However, having multiple monitors can weaken managerial accountability as monitoring mechanisms may conflict with one another (Misangyi and Acharya 2014). Consequently, managers can find opportunities to divert firm resources while appearing to address principals' requirements. In other words, the multiple-objective hypothesis (Chih *et al.* 2008) is more supported in coordinated market economies in which representative business associations are frequently directly involved in defining and legitimising corporate actors' proper obligations.

Therefore, our second hypothesis is as follows:

H2: EM is associated more positively with CSR in coordinated market economies than in liberal market economies.

3 Research design

Sample and data

We obtain our sample by combining data from various databases. First, we select all European companies whose corporate governance, environmental, and social score data are available on ASSET4 for the 2002-13 period. We then collect their accounting and financial data from Worldscope and DataStream, separately. To be included in the sample, a firm must have annual accounting and financial data available, in addition to available CSP data. Further, similar to studies in the literature (e.g., Choi *et al.* 2013), we exclude financial firms because the nature of EM, the dependent variable in our study, differs substantially between industrial and financial firms. After applying these criteria, the final dataset consists of 749 firms.

Dependent variable

Our dependent variable, EM, assesses a firm's earnings aggressiveness. According to Dechow and Skinner (2000), earnings aggressiveness describes the behaviour of managers in delaying the recognition of losses and/or accelerating the recognition of gains to meet specific earnings targets. Following Chih *et al.* (2008)¹, our dependent variable is constructed as follows:

$$EM_{it} = \frac{(earnings_{it} - net\ cash\ flows_{it}) / number\ of\ shares\ outstanding_{it}}{price_{it-1}}, \quad (1)$$

where $net\ cash\ flows_{it} = CF\ from\ operations_{it} - (CF\ from\ investing_{it} + CF\ from\ financing_{it})$. In addition, we obtain CF from operations by subtracting the accrual component from earnings. Following Dechow (1994), the accrual component is constructed as follows:

¹ To control for differences in firm size and performance, we scale using the product of the number of shares outstanding and their lagged price and not using lagged total assets, as in Chih *et al.* (2008).

$$\begin{aligned}
Accruals_{it} = & \\
& (\Delta total\ current\ assets_{it} - \Delta cash\ \&\ cash\ equivalents_{it}) - (\Delta total\ current\ liabilities_{it} \\
& - \Delta short\ term\ debt\ included\ in\ current\ liabilities_{it} - \Delta taxes\ payable_{it}) \\
& - depreciation\ \&\ amortisation\ expenses_{it},
\end{aligned} \tag{2}$$

where Δ represents a change from year $t-1$ to year t .

Independent variables

In the past, constructing a truly representative measure of CSP has been difficult for several reasons. As such a measure represents a multi-dimensional concept, we study both individual dimensions and aggregate CSP. The corporate governance, economic, environmental, and social dimensions of CSR are available in ASSET4. Following Gargouri *et al.* (2010), we use the corporate governance, environmental, and social metrics to construct aggregate CSP. Given the absence of theoretical guidance on how best to construct the aggregate measure, we utilise the convention established by Ioannou and Serafeim (2012) and assign equal weights to the individual scores in constructing the aggregate CSP score.

The variables are defined as:

- governance:* the score on the corporate governance dimension, which measures a firm's systems and processes that ensure that board members and executives act in the best interest of shareholders;
- environment:* the score on the environmental dimension, which measures a firm's impact on living and non-living natural systems, including the air, land, and water, as well as on complete ecosystems;
- society:* the score on the social dimension, which measures a firm's capacity to create trust and loyalty with its workforce, customers and society using its best management practices;

CSP: the arithmetic average of the governance, environment and society scores.

Firm control variables

In addition, firm characteristics also affect a firm's EM practices (Barua *et al.* 2010). To control for these factors, we use the following control variables:

leverage: total debt over total assets;

profitability: return on assets;

size: natural logarithm of total assets;

dindustry: an indicator variable equal to 1 if a firm's primary industry is basic materials, oil & gas, or utilities, and 0 otherwise²; and

dtime: an indicator variable equal to 1 if the year is during the 2008-13 period, and 0 otherwise.

Model

We estimate our panel data using the model below:

$$y_{it} = \mathbf{x}_{it}'\boldsymbol{\beta} + v_{it} + u_{it} \quad i = 1, K, N; \quad t = 1, K, T \quad (3)$$

where y_{it} is our dependent variable for firm i at time t , \mathbf{x}_{it} is a vector of covariates, v_{it} is an unobservable time-constant firm effect, u_{it} is an idiosyncratic error term, and $\boldsymbol{\beta}$ is a vector of coefficients to be estimated. Our dependent variable is *EM*, as defined in Equation (1). The vector of covariates includes CSP scores and (firm and time) control variables. All continuous variables have been winsorized at 1% on both tails.

We analyse the relationship between the EM and CSP scores by applying a plethora of static and dynamic econometric models. In static models, all covariates are assumed to be strictly exogenous. We employed the Breush-Pagan test to check for the presence of firm-specific heterogeneity and used Random Effects (RE) and Fixed Effects (FE) estimators. As the

² We construct a categorisation similar to that of Jackson and Apostolakou (2010). Industry classifications are available from DataStream.

Hausman test preferred the FE estimator to the RE estimator³, the next section discusses only the results from the FE estimations. In fact, a FE estimation is well suited to our case as it allows the removal of theoretical and cross-sectional variations in the variables of interest due to gradual changes in firm characteristics over time (Zhou 2001). To address a wider form of endogeneity, we also estimate dynamic models using a system GMM estimator (Green 2011) in which all covariates (excluding time invariant dummies) are assumed to be endogenous and instrumented with their own lags. To investigate the effects of the institutional frameworks, the sample is divided into two groups: (1) coordinated market economies, in which firms are encapsulated in a system of wide organisational responsibilities emanating from a high level of interdependencies and interactions among stakeholders (Matten and Moon 2008); and (2) liberal market economies, a framework originating from the Anglo-Saxon model that allows firms to articulate their own version of social responsibilities (Matten and Moon 2008). We then estimate Equation (3) for each of the groups. In all the estimations, we use robust standard errors clustered by firm (Gujarati and Porter 2009).

4 Results

Table 1 presents the descriptive statistics for the variables. The average level of EM is higher in coordinated market economies than in liberal market economies, and this difference is statistically significant at the 1% level, as indicated in the last column of the table. This result is consistent with La Porta *et al.* (1998), who found a relatively weak quality of accounting in coordinated market economies. *EM* in coordinated market economies also presents higher levels of variation around the average value than it does in liberal market economies. Governance, environment, social and CSP scores range from 0 to 100, with an average of approximately 60, except for the governance score. Moreover, the governance score is significantly higher in liberal market economies than in coordinated market economies. By contrast, environmental and social scores are significantly higher in coordinated market economies than in liberal market economies.

³ Results available upon request.

The correlation matrix reported in Table 2 reveals that environmental and social scores are highly correlated with a coefficient of 0.75, suggesting that firms that focus on environmental matters also focus on social matters, which reflects the interconnectedness of the two issues. EM is negatively correlated with the governance score and positively correlated with the environmental and social scores. As managerial behaviour is influenced by a firm's governance structure, a relatively high correlation between EM and the governance score is expected.

Table 3 summarises the results from the FE estimations chosen by the Hausman tests. Panel A shows that the relationship between EM and CSP is positive and statistically significant, which is consistent with Gargouri *et al.* (2010:321, 322), who state that the “satisfaction of a wider group of stakeholders is associated with a lack of performance criteria by which to appraise managers and facilitate managerial discretion, notably with respect to EM”. Moreover, the results support hypothesis H1, which predicts a positive relationship between EM and CSP. The results in Panel A of Table 3 are also in line with the multiple-objectives hypothesis formulated by Chih *et al.* (2008), who predicted that firms portrayed as socially responsible engage in EM to disguise their actual engagement in their own interests at the expense of stakeholders. In this context, our results suggest that CSR may indeed be used to camouflage managerial opportunistic behaviour.

In addition, the results from Panels B and C together substantiate hypothesis H2 that the institutional framework empowers agency conflicts. Panel B of Table 3 shows that in coordinated market economies, the relationship between EM and CSP is positive and significant at the 5% level, although the main driver of the relationship is the firm's governance score. The failure of the governance structure to inhibit managerial EM may reflect the effectiveness (or lack thereof) of governance in coordinated market economies. In light of the institutional context, this result suggests that institutionalised stakeholder involvement in coordinated market economies may have provided managers with the opportunity to pursue personal goals. By contrast, the results in Panel C show that neither CSP nor any of the individual aspects of CSP affects EM in liberal market economies. The coefficients of the control variables in all three panels are also notable.

The positive and statistically significant coefficients of *profitability* and *size* in all the models indicate that larger and more profitable firms have a tendency to engage in more EM.

We then perform “poolability” tests⁴ on estimates of static panel regressions. These tests examine the statistical differences in the coefficients of the different measures of CSP across subsamples. The difference between the coefficients estimated within each subsample is indicative of the effect that the institutional framework has on the relationship between EM and CSP observed in the panel models. As the differences with regard to *governance* and *CSP* are positive and statistically significant, the relationship between EM and our representative measure of CSP (and of corporate governance quality) is more strongly positive in coordinated market economies than in liberal market economies.

In this type of study, there are two potential issues in the data that can produce misleading conclusions. These issues involve the possibility that managerial EM practices themselves led to the decisions to engage in CSR or that factors other than CSP are affecting or causing these EM practices. To investigate these two issues, we re-estimate Equation (3) using a dynamic panel estimation approach. Although the FE models utilised in Table 3 address the second issue (Carter *et al.* 2010), dynamic panel models can account for both issues (Wintoki *et al.* 2012). Panel A in Table 4 shows that the effects of governance and overall CSP remain positive and significant at the 5% level in coordinated market economies. Moreover, although the positive effects of the environmental score on EM become clear, the effect of CSP on EM remains insignificant in liberal market economies. The effects of profitability and size on EM persist, while the effects of industry are insignificant. Thus, even after controlling for potential issues that can lead to misleading conclusions, the results in Table 4 corroborate those in Table 3. The results in Table 4 reinforce the notion that firm EM is positively related to firm CSP but that the relationship depends on the institutional environment in which firms operate.

⁴ Results available upon request.

Furthermore, the results from Tables 3 and 4 reveal that an improved governance score in coordinated market economies is associated with an increase in firm EM, although no such relationship is observed in liberal market economies, suggesting that in countries with relatively weak governance, an improved governance score may not necessarily imply improved governance. For instance, Xie *et al.* (2003) find that corporate boards and audit committees with a high proportion of outside directors mitigate EM only when the members of the board and the committee have corporate or financial backgrounds and only when the board and audit committee play an active role (see also Peasnell *et al.* 2005). Hence, an increase in the number of outside directors on the board and/or the audit committee may appear to be an improvement in corporate governance while in fact providing only minimal indications of board effectiveness. The governance score in ASSET4 is constructed based on a list covering more than 100 aspects of board function and structure, most of which involve board composition, such as board independence and diversity, and assurances that monitoring mechanisms are in place, such as the presence of a nomination committee. Fewer than five items on the list involve the number of board meetings per year and the background of board members.⁵ In this light, our results suggest that engaging in improvements in governance in coordinated market economies may not yield actual improvements in the effectiveness of firm governance. Moreover, Oritz-de-Mandojana *et al.* (2016) find that the national institutional context plays an important role regarding the effects that corporate governance can have on a firm's environmental sustainability practices.

5 Discussions and Conclusions

This paper investigates the relationship between EM and CSP. By employing European-wide data, we explore the effects of the institutional context on that relationship and find that firms with high CSP engage in more EM. Moreover, this positive relationship is observed only in coordinated market economies. Our findings support the notion that monitoring managers using

⁵ A detailed description of the list of features covered by the ASSET4 corporate governance score is available upon request.

specific criteria is not effective in coordinated market economies in which these managers are expected to serve all of the firm's multiple stakeholders as opposed to pursuing value maximization alone as an objective. Managers treat this context as an opportunity to divert firm resources to pursue their own interests.

This study contributes to the literature in a number of ways. First, it investigates the importance of the institutional context in understanding the effects that CSR has on firms. Moreover, the European-wide sample in our study provides relevant and useful insights for policymaking in which policies tend to be harmonised across the countries. Finally, our findings have important implications for both regulators and firm stakeholders. Thus, regulators should consider the differences between national institutional contexts when attempting to harmonise CSR regulations across countries in the region, as a one-size-fits-all approach is unlikely to succeed. This study also highlights areas in which new regulations can be targeted. For instance, new regulations introduced in coordinated market economies should encourage firms to engage proactively in CSR while explicitly communicating their activities to stakeholders. Moreover, these new regulations should be introduced hand-in-hand with new regulations to improve the quality of earnings reported by firms. The results also call for regulations to improve corporate governance effectiveness in coordinated market economies. Additionally, our findings should help sensitise stakeholders and analysts to the importance of considering the potential impact of the institutional context on firm behaviour when considering choices for their investments.

Some potential limitations of our study will provide opportunities for future research. First, future studies could utilise different measures of EM and different measures of CSP to explore the effects of the institutional framework on managers' strategic decisions. For example, although we use earnings aggressiveness as a proxy for EM, other proxies (such as earnings smoothing and earnings loss avoidance) can be considered to test the sensitivity of managers' choice of EM practices. Finally, the positive relationship between EM and the governance score is intriguing.

Future research might look more closely into how the effectiveness of governance actually changes as firms improve their governance score in coordinated market economies.

Despite its limitations, our research nonetheless provides important information to investors and policy makers alike regarding the reliability of CSR policies. It reveals that firm' incentives for incessantly pursuing socially responsible norms and governance practices may be secretly motivated by the desire to present firms' earnings in a better light and that the institutional framework plays a role as well. Therefore, on one hand, policy makers should introduce detailed guidelines to ensure that CSR policies are based on actual plans with the right intentions. On the other hand, socially responsible investors should assess firms' CSR policies with caution.

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Table 1: Descriptive statistics.

	<i>Whole sample</i>	<i>(a) Coordinated market economies</i>			<i>(b) Liberal market economies</i>			<i>Diff. (b)-(a)</i>	
	Observations	Mean	Median	SD	Mean	Median	SD	T-test	
<i>EM</i>	749	0.6376	0.6457	0.3917	0.0352	0.0069	0.1574	-0.6024	***
<i>governance</i>	754	46.0843	45.6650	26.2547	70.8940	74.4100	17.9851	24.8097	***
<i>environment</i>	754	67.4930	80.7100	28.7722	59.4515	63.8500	26.7497	-8.0415	***
<i>society</i>	754	67.8066	77.9500	28.0264	63.2527	68.6800	25.6804	-4.5539	**
<i>CSP</i>	754	60.3849	66.3367	23.6793	64.4861	67.8067	20.1826	4.1012	***
<i>leverage (%)</i>	751	37.4979	38.6900	19.5063	34.1176	34.6150	22.2035	-3.3803	**
<i>profitability (%)</i>	751	6.8140	6.0800	4.6628	7.9485	7.5200	4.9248	1.1345	***
<i>size</i>	752	15.6065	15.6063	1.3682	14.1944	13.8802	1.3392	-1.4121	***
<i>dindustry</i>	754	%			%			-0.0171	
		0.2516			0.2344				

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Table 2: Correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) <i>EM</i>	1.0000								
(2) <i>governance</i>	-0.3006 ***	1.0000							
(3) <i>environment</i>	0.1145 ***	0.3603 ***	1.0000						
(4) <i>society</i>	0.0743 ***	0.4455 ***	0.7466 ***	1.0000					
(5) <i>CSP</i>	-0.0397 **	0.7211 ***	0.8600 ***	0.8894 ***	1.0000				
(6) <i>leverage</i>	0.0125	0.0102	0.0809 ***	0.1151 ***	0.0845 ***	1.0000			
(7) <i>profitability</i>	0.2344 ***	0.0035	-0.1430 ***	-0.0922 ***	-0.0949	-0.2946 ***	1.0000		
(8) <i>size</i>	0.3656 ***	0.0620 ***	0.4915 ***	0.4720 ***	0.4187 ***	0.2583 ***	-0.1876 ***	1.0000	
(9) <i>dindustry</i>	0.0746 ***	0.0287 **	0.0811 ***	0.1071 ***	0.0877 ***	-0.0202 *	-0.0522 ***	0.1566 ***	1.0000

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Table 3: Fixed-effect panel estimation results.*Panel A: The whole sample*

FE-OLS	Model 1			Model 2			Model 3			Model 4		
Variables	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.
<i>constant</i>	-0.7204	0.2506	***	-0.7778	0.2500	***	-0.7870	0.2504	***	-0.7430	0.2536	***
<i>governance</i>	0.0009	0.0003	***									
<i>environment</i>				0.0003	0.0003							
<i>society</i>							0.0001	0.0003				
<i>CSP</i>										0.0008	0.0004	*
<i>leverage</i>	-0.0010	0.0004	**	-0.0011	0.0004	**	-0.0011	0.0004	**	-0.0011	0.0004	**
<i>profitability</i>	0.0414	0.0022	***	0.0415	0.0022	***	0.0415	0.0022	***	0.0414	0.0022	***
<i>size</i>	0.0558	0.0164	***	0.0614	0.0165	***	0.0629	0.0165	***	0.0574	0.0169	***
<i>dtime</i>	-0.0508	0.0102	***	-0.0421	0.0103	***	-0.0404	0.0102	***	-0.0468	0.0103	***
Firm Fixed Effects	yes			yes			yes			yes		
Regression F/c ²	84.05			82.29			81.72			82.38		
R ² overall	0.1040			0.1388			0.1388			0.1261		
Observations	5991			5937			5937			5937		

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel B: Coordinated market economies

FE-OLS	Model 5			Model 6			Model 7			Model 8		
Variables	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.
<i>constant</i>	-0.7366	0.3913	*	-0.8602	0.3856	**	-0.8604	0.3910	**	-0.7864	0.3961	**
<i>governance</i>	0.0011	0.0003	***									
<i>environment</i>				0.0003	0.0004							
<i>society</i>							0.0002	0.0004				
<i>CSP</i>										0.0010	0.0005	**
<i>leverage</i>	-0.0007	0.0007		-0.0009	0.0007		-0.0009	0.0007		-0.0008	0.0007	
<i>profitability</i>	0.0669	0.0023	***	0.0672	0.0023	***	0.0672	0.0023	***	0.0671	0.0023	***
<i>size</i>	0.0581	0.0249	**	0.0675	0.0247	***	0.0681	0.0252	***	0.0605	0.0257	**
<i>dtime</i>	-0.0578	0.0135	***	-0.0452	0.0135	***	-0.0442	0.0135	***	-0.0529	0.0138	***
Firm Fixed Effects	yes			yes			yes			yes		
Regression F/c ²	183.39			182.15			182.62			181.55		
R ² overall	0.2922			0.2983			0.2969			0.2979		
Observations	3868			3829			3829			3829		

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel C: Liberal market economies

FE-OLS	Model 9			Model 10			Model 11			Model 12		
Variables	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.
<i>constant</i>	-0.3345	0.2014	*	-0.3350	0.1980	*	-0.3368	0.2003	*	-0.3401	0.2006	*
<i>governance</i>	-0.0002	0.0002										
<i>environment</i>				-0.0001	0.0002							
<i>society</i>							-0.0002	0.0001	*			
<i>CSP</i>										-0.0003	0.0002	
<i>leverage</i>	0.0001	0.0002		0.0001	0.0002		0.0002	0.0002		0.0001	0.0002	
<i>profitability</i>	0.0034	0.0010	***	0.0034	0.0010	***	0.0034	0.0010	***	0.0034	0.0010	***
<i>size</i>	0.0244	0.0140	*	0.0242	0.0129	*	0.0249	0.0133	*	0.0254	0.0134	*
<i>dtime</i>	-0.0098	0.0054	*	-0.0103	0.0068		-0.0098	0.0065		-0.0089	0.0061	
Firm Fixed Effects	yes			yes			yes			yes		
Regression F/c ²	5.10		***	5.87		***	6.30		***	6.35		***
R ² overall	0.0011			0.0014			0.0044			0.0038		
Observations	2123			2108			2108			2108		

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Table 4: Dynamic panel estimation results.*Panel A: Coordinated market economies*

SYS-GMM	Model 13			Model 14			Model 15			Model 16		
Variables	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.
<i>constant</i>	-0.9718	0.4186	**	-1.1517	0.4299	***	-1.0737	0.4257	**	-0.9587	0.4294	**
<i>lag1</i>	0.0452	0.0242	*	0.0457	0.0239	*	0.0465	0.0236	**	0.0445	0.0258	*
<i>lag2</i>	-0.1421	0.0207	***	-0.1506	0.0173	***	-0.1485	0.0174	***	-0.1464	0.0172	***
<i>governance</i>	0.0012	0.0004	***									
<i>environment</i>				0.0012	0.0005	**						
<i>society</i>							0.0008	0.0005				
<i>CSP</i>										0.0019	0.0007	***
<i>leverage</i>	-0.0039	0.0009	***	-0.0039	0.0008	***	-0.0040	0.0007	***	-0.0039	0.0008	***
<i>profitability</i>	0.0635	0.0031	***	0.0630	0.0032	***	0.0633	0.0033	***	0.0634	0.0032	***
<i>size</i>	0.0863	0.0273	***	0.0953	0.0280	***	0.0934	0.0271	***	0.0818	0.0283	***
<i>dindustry</i>	-0.0332	0.1321		0.0729	0.1242		-0.0315	0.1282		-0.0080	0.1301	
<i>dtime</i>	-0.0515	0.0166	***	-0.0615	0.0173	***	-0.0535	0.0171	***	-0.0602	0.0169	***
Regression c ²	919.07		***	955.45		***	900.50			1014.79		***
Observations	3298			3260			3260			3260		

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel B: Liberal market economies

SYS-GMM	Model 17			Model 18			Model 19			Model 20		
Variables	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.	Coeff.	Std.Err.	Sign.
<i>constant</i>	-0.2755	0.4364		-0.2844	0.4882		-0.3054	0.7063		-0.3084	0.4375	
<i>lag1</i>	0.6153	0.1387	***	0.6099	0.1113	***	0.6025	0.0715	***	0.6012	0.0882	***
<i>lag2</i>	0.0492	0.1331		0.0413	0.0659		0.0365	0.2518		0.0379	0.1703	
<i>governance</i>	-0.0002	0.0011										
<i>environment</i>				-0.0005	0.0003	**						
<i>society</i>							-0.0009	0.0012				
<i>CSP</i>										-0.0010	0.0013	
<i>leverage</i>	-0.0001	0.0007		-0.0001	0.0005		0.0000	0.0007		-0.0001	0.0009	
<i>profitability</i>	0.0030	0.0010	***	0.0029	0.0009	***	0.0031	0.0023		0.0030	0.0016	*
<i>size</i>	0.0195	0.0372		0.0210	0.0368		0.0239	0.0544		0.0250	0.0372	
<i>dindustry</i>	0.0109	0.0425		0.0131	0.0466		0.0284	0.0277		0.0116	0.0910	
<i>dtime</i>	-0.0010	0.0053		0.0000	0.0098		0.0003	0.0089		0.0027	0.0065	
Regression c ²	84.79		***	973.83		***	524.06		***	134.37		***
Observations	1893			1878			1878			1878		

*, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.